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ABSTRACT

This study attempts to determine the relative ranking value of information gathering devices that could be substituted for tests of mental maturity. Results indicate that the three best devices are: a standardized test of academic achievement, a test of personality, and a self-concept inventory, all of which are easily administered, scored, and interpreted. (DLG)

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TEST RANKINGS AND SELECTION PROCEDURES FOR IDENTIFYING GIFTED
INTERMEDIATE ELEMENTARY STUDENTS

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The problem of identifying gifted children continues to be of importance to teachers and to school administrators. Now that many school systems are questioning or even eliminating the use of tests of mental maturity, it becomes necessary to find some acceptable substitutes. Many problems associated with group intelligence tests have been reported. These research projects (2) have shown that the problems associated with intelligence tests are more serious than previously thought, especially in the area of identifying gifted children. In addition to these problems, previously reported studies (1) (4) have shown that classroom teachers are not efficient or effective in identifying the gifted students in their classrooms.

PURPOSE

This study was initiated in an attempt to determine what information gathering devices, other than tests of mental maturity, would serve to identify gifted children efficiently. These substitute devices should be easily administered, scored, and interpreted by teachers in order to facilitate acceptance and widespread use.

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DEFINITION OF TERMS

Gifted Children. For the purposes of this study only, those students who scored 120 or above on the California Short Form Test of Mental Maturity were classified as gifted.

SUBJECTS

One hundred sixty one students in two fourth, two fifth, and two sixth grade classes were included in this study. These subjects were from two elementary schools in the midwest. One school was a public school and the other one was a private school located in the same geographical area. Complete data were obtained from all of the 161 subjects. No drop-outs or transfers occurred during the data collection schedule.

MEASURING INSTRUMENTS

The information gathering devices used were (1) The California Short Form Test of Mental Maturity, (2) The California Test of Personality, (3) The Iowa Test of Basic Skills, Multi-Level Edition for grades 3-9, Form I, (4) The Word Association Test, (5) Uses of Things Test of Creativity, (6) The Things Done on Your Own Activities Check-List, (7) The Sears Self-Concept Inventory, and (8) The Children's Manifest Anxiety Scale.

PROCEDURES

The data were analyzed by computer using a stepwise seven-variable multiple regression equation.

This statistical procedure ranks the information gathering devices in order of importance so that their relative value can be established for each of the sex and I.Q. groups. The principles of this method, briefly explained, are as follows: The first device chosen statistically will be the one that offers the most in predictive value. The second, third and all other devices are then selected so that they will add to the predictive value when combined with the first selection. It is generally believed that little value can be obtained from more than four or five devices. This statistical procedure also gives an estimated I.Q. based on a composite analysis of how well each student did on all of the seven variables utilized. (3)

The data were categorized prior to computer analysis by sex and I.Q. The six groups formed were (I) Male, I.Q. 120 and above, (II) Male, I.Q. 119 and below, (III) Female, I.Q. 120 and above, (IV) Female, I.Q. 119 and below, (V) Male and Female, I.Q. 120 and above, and (VI) Male and Female, I.Q. 119 and below.

RESULTS

Table I indicates the importance ranking the statistical analysis gave to each of the information gathering devices for each of the six groups.

TABLE I
IMPORTANCE RANKING OF INFORMATION GATHERING DEVICES

Group	Uses of Things	Things Done on Own	Word Assoc.	ITBS	CTP	CMAS	Self-Concept
I	2nd	5th	6th	1st	3rd	4th	7th
II	7th	4th	1st	3rd	6th	5th	2nd
III	1st	2nd	5th	6th	3rd	7th	4th
IV	4th	3rd	6th	1st	5th	7th	2nd
V	6th	5th	7th	1st	2nd	4th	3rd
VI	6th	3rd	4th	1st	7th	5th	2nd

Four of the six groups: Group I, IV, V, and VI are most easily identified by using a standardized test of academic achievement. Group II is most easily identified through the use of the Word Association Test. Group III is most easily identified through the use of the Uses of Things Done on Your Own Activities Checklist.

Table II lists the multiple correlation coefficients for each of the seven selected devices showing the relative predictive value each adds to the first selection.

TABLE II

MULTIPLE CORRELATION COEFFICIENTS FOR STUDENTS WITH I.Q. OF 120 AND ABOVE

Selections	Male and Female	Female	Male
1st	.35	.35	.36
2nd	.43	.44	.48
3rd	.46	.50	.49
4th	.47	.55	.52
5th	.49	.57	.56
6th	.49	.57	.57
7th	.49	.57	.57

The lowest I.Q. recorded was sixty six. The highest I.Q. recorded was 174. When all of the data were analyzed for groups V and VI, the mean actual I.Q. and the mean estimated I.Q. were so close in value that no significant differences were found to exist between them.

When individual and sub-group actual I.Q. and estimated I.Q.s were compared, striking differences were found to exist. Students with actual I.Q.s under 100 had a mean actual I.Q. of 83. Their mean estimated I.Q. was 98.5. Eighty of the 161 subjects have estimated I.Q.s that are higher than their actual I.Q. The students at the lowest end of the I.Q. range have higher residuals between actual and estimated I.Q.s.

All of the twenty students who scored under 100 on the test of mental maturity showed estimated I.Q.s to be higher. Eleven males with I.Q. under 100 had a mean actual I.Q. of 90.4 and a mean estimated I.Q. of 102.0. Nine females with I.Q. under 100 had a mean actual I.Q. of 92.3 and a mean estimated I.Q. of 102.4.

Gifted male students are most easily identified by using (1) a standardized test of academic achievement, (2) The Uses of Things Test of Creativity, and (3) The California Test of Personality, respectively in order of importance.

Gifted female students are most easily identified by using (1) The Uses of Things Test of Creativity, (2) The Things Done on Your Own Activities Checklist, and (3) The California Test of Personality.

Gifted male and female students are, when the data are combined for both sexes, most easily identified by using (1) a standardized test of academic achievement, (2) The California Test of Personality, and (3) The Sears Self-Concept Inventory.

DISCUSSION

In order for teachers to be effective and efficient in identifying gifted children without the use of a test of mental maturity it will be necessary to use a combination of other information gathering devices instead of relying on just one.

The best combination to use, in order to identify gifted male and female students in the intermediate grades, would be a standardized

test of academic achievement (variable 4), a test of personality (variable 5), and a self-concept inventory (variable 7). The data analysis indicates that students who are high in academic achievement and rate themselves highly in the areas of personality and self-concept are correspondingly higher in intelligence as measured by a group test of mental maturity. The three devices listed as the three most important ones for identifying gifted children are easily administered, scored, and interpreted. Pre-administration knowledge required can be learned quickly and easily.

The information contained in Table II agrees with Guilford's findings relative to the value of utilizing more than four or five variables for predictive value. No significant amount of value was gained from the addition of any variables above the first three.

Tests of creativity play an important role when identifying gifted female students only. When data are combined for gifted male and female students the tests of creativity play a minor role in the identification procedure.

Students who would normally be called low average to below average because of low scores on tests of mental maturity are shown in a totally different light when other measuring devices are used. All of these below average and low average students, as a group, showed that their estimated I.Q. is from ten to twelve points above their measured actual I.Q. Tests of mental maturity place these students in a category that is not truly indicative of their potential.

The choice of 120 as the arbitrary difference between gifted and

non-gifted students appears to be a very good one. Only one student out of eighty seven with I.Q.s below 120 had an estimated I.Q. above 120. No student out of seventy four with an actual I.Q. of 120 or above had an estimated I.Q. less than 120.

SUMMARY

This study attempted to determine the relative ranking value of information gathering devices that could be substituted for tests of mental maturity.

One hundred sixty one subjects in grades four through six from two elementary schools were included in this study. Eight instruments were used to facilitate the data gathering. The data were analyzed statistically through the use of a stepwise seven-variable multiple regression equation.

The three best devices, in order of importance, are (1) a standardized test of academic achievement, (2) a test of personality, and (3) The Sears Self-Concept Inventory. All of these devices are easily administered, scored, and interpreted by classroom teachers who have little or no training in this area of academic evaluation. These three factors should facilitate acceptance if changes in procedures are desired.

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